UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,983	11/29/2000	Christopher W. Fraser	777.400US1	1299

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EXAMINER
NAHAR, QAMRUN

ART UNIT	PAPER NUMBER
2191	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/725,983	FRASER ET AL.
	Examiner	Art Unit
	Qamrun Nahar	2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 June 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34 and 38-58* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34 and 38-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed on 6/30/05.

2.   Claims 1, 19, 26, 31, 38 and 55 have been amended.

3.   Claims 1-34 and 38-58 are pending.

4.   Claims 1-34 and 38-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5.   Claims 1-4, 6-7, 9-13, 15, 17-23, 25-34, 38-41, 43-44, 46-50, 52 and 54-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnston (U.S. 6,189,142).

6.   Claims 5, 8, 14, 16, 24, 42, 45, 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston (U.S. 6,189,142) in view of Levine (U.S. 6,349,406).

Response to Amendment

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8.   Claims 1-34 and 38-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 19, 26, 31, 38 and 55 recite "wherein the history operator is capable of being referenced directly by the source code" which renders the claims indefinite because the source code can not directly *reference* the history operator since source code is merely human-readable

program statements written by a programmer in a high-level or assembly language that are not

directly readable by a computer. Source code needs to be compiled into object code before it can

be executed by a computer. Object code can directly *reference* the history operator. Therefore,

this limitation is interpreted as "wherein the history operator is capable of being referenced

directly by the second object code".

As per claims 2-18, 20-25, 27-30, 32-34, 39-54, and 56-58, these claims are rejected for

dependency upon above rejected base claims 1, 19, 26, 31, 38 and 55, respectively.

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10.   Claims 1-4, 6-7, 9-13, 15, 17-23, 25-34, 38-41, 43-44, 46-50, 52 and 54-58 are rejected

under 35 U.S.C. 102(e) as being anticipated by Johnston (U.S. 6,189,142).

Per Claim 1 (Amended, as best understood):

The Johnston patent discloses:

- a computerized method for translating source code into object code, comprising:

recognizing a history operator and a history operand in the source code; generating first

object code that, when executed, saves a data history associated with an instance of the history operand (column 9, lines 43-51 and column 10, lines 1-14; "code hooks", when executed, saves a data history associated with an instance of the history operand; where the history operand is identified by the locations where the code hooks are inserted. History operands are the elements in the identified locations.)

- and generating second object code that, when executed, performs the history operator on the data history, wherein the history operator is capable of being referenced directly by the second object code (column 8, lines 54-67 to column 9, lines 1-17; "sum", "sorting", "dividing", and "subtracting" are interpreted as history operators).

Per Claim 2:

The Johnston patent discloses:

- wherein the first object code further saves values assigned to a variable in the data history when the object code is executed (column 9, lines 43-51 and column 10, lines 1-14).

Per Claim 3:

The Johnston patent discloses:

- wherein the history operand further comprises an expression of variables and wherein the first object code further saves a result of the expression in the data history (column 10, lines 1-14).

Per Claim 4:

The Johnston patent discloses:

- wherein generating first object code further comprises allocating storage for the data history (column 8, lines 34-53).

Per Claim 6:

The Johnston patent discloses:

- wherein performing the history operator on the data history further comprises: querying the data history based on contents of the data history (column 8, lines 34-53).

Per Claim 7:

The Johnston patent discloses:

- wherein the history operand comprises a function and the data history comprises values returned by the function (column 8, lines 34-53).

Per Claim 9:

The Johnston patent discloses:

- wherein the history operand comprises a label associated with a source code statement, and wherein performing the history operator on the data history further comprises: counting a number of times the source code statement associated with the label was executed (column 8, lines 34-53).

Per Claim 10:

The Johnston patent discloses:

- wherein the label is programmer-defined (column 8, lines 34-53).

Per Claim 11:

The Johnston patent discloses:

- wherein the label comprises a programming language control construct (column 8, lines 34-53).

Per Claim 12:

The Johnston patent discloses:

- wherein performing the history operator on the data history is a function selected from a group consisting of: summing the data history, averaging the data history, determining a maximum of the data history, selecting an element of the data history, determining a minimum of the data history, determining a number of values in the data history, determining a first entry in the data history, determining a last entry in the data history, determining a subsequence of the data history, performing a reduction operation, and performing a statistical function (column 8, lines 54-67 to column 9, lines 1-18).

Per Claim 13:

The Johnston patent discloses:

- the history operand comprises a programming language keyword representing a loop; and the history operator comprises an iteration count of the loop (column 8, lines 54-67 to column 9, lines 1-18).

Per Claim 15:

The Johnston patent discloses:

- wherein saving the data history further comprises: saving the data history in a linked list (column 8, lines 34-53).

Per Claim 17:

The Johnston patent discloses:

- wherein performing the history operator on the data history further comprises: resetting the data his

Per Claim 18:

The Johnston patent discloses:

- wherein saving the data history and performing the history operator further comprise

updating an accumulator (column 8, lines 34-53).

Per Claims 19 (Amended, as best understood), 20-21, 23 & 25:

These are computer-readable medium versions of the claimed method discussed above

(claims 1-3, 7 & 9, respectively), wherein all claim limitations also have been addressed and/or

covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by

Johnston.

Per Claim 22:

The Johnston patent discloses:

- wherein the history operand comprises a heap-allocated object (column 10, lines 15-44).

Per Claims 26 (Amended, as best understood) & 27:

These are computer-readable medium versions of the claimed method discussed above (claims 1 and 4), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Johnston.

Per Claims 28-30:

These are computer-readable medium versions of the claimed method discussed above (claims 6, 9 and 12, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Johnston.

Per Claim 31 (Amended, as best understood):

This is a computer system version of the claimed method discussed above (claims 1 and 4), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Johnston.

Per Claims 32-34:

These are computer system versions of the claimed method discussed above (claims 2, 12 and 9, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Johnston.

Per Claims 38 (Amended, as best understood) & 39-41, 43-44, 46-50, 52 & 54:

These are another versions of the claimed method discussed above (claims 1-4, 6-7, 9-13, 15 & 17, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Johnston.

Per Claims 55 (Amended, as best understood) & 56:

These are computer-readable medium versions of the claimed method discussed above, claim 1, wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Johnston.

Per Claims 57-58:

These are computer-readable medium versions of the claimed method discussed above (claims 6 & 9, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Johnston.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12.   Claims 5, 8, 14, 16, 24, 42, 45, 51 and 53 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Johnston (U.S. 6,189,142) in view of Levine (U.S. 6,349,406).

Per Claim 5:

The rejection of claim 2 is incorporated, and further, Johnston does not explicitly teach

that the data history further comprises program locations where the assignments occurred and

timestamps indicating when the assignment was made. Levine teaches that the data history

further comprises program locations where the assignments occurred and timestamps indicating

when the assignment was made (column 13, lines 66-67 to column 14, lines 1-13).

It would have been obvious to one having ordinary skill in the computer art at the time of

the invention was made to modify the method disclosed by Johnston to include that the data

history further comprises program locations where the assignments occurred and timestamps

indicating when the assignment was made using the teaching of Levine. The modification would

be obvious because one of ordinary skill in the art would be motivated to determine the amount

of time elapsed between each event.

Per Claim 8:

The rejection of claim 7 is incorporated, and further, Johnston does not explicitly teach

that the data history further comprises program locations where the values were returned and

timestamps indicating when the values were returned. Levine teaches that the data history

further comprises program locations where the values were returned and timestamps indicating

when the values were returned (column 13, lines 66-67 to column 14, lines 1-13).

It would have been obvious to one having ordinary skill in the computer art at the time of

the invention was made to modify the method disclosed by Johnston to include that the data

history further comprises program locations where the values were returned and timestamps

indicating when the values were returned using the teaching of Levine. The modification would

be obvious because one of ordinary skill in the art would be motivated to determine the amount

of time elapsed between each event.

Per Claim 14:

The rejection of claim 1 is incorporated, and further, Johnston does not explicitly teach

that saving the data history further comprises: saving the data history in an array, wherein each

element of the array comprises a value associated with the history operand at a particular time.

Levine teaches saving the data history further comprises: saving the data history in an array,

wherein each element of the array comprises a value associated with the history operand at a

particular time (column 13, lines 66-67 to column 14, lines 1-13 and Fig. 10A).

It would have been obvious to one having ordinary skill in the computer art at the time of

the invention was made to modify the method disclosed by Johnston to include saving the data

history further comprises: saving the data history in an array, wherein each element of the array

comprises a value associated with the history operand at a particular time using the teaching of

Levine. The modification would be obvious because one of ordinary skill in the art would be

motivated to store data efficiently.

Per Claim 16:

The rejection of claim 1 is incorporated, and further, Johnston does not explicitly teach that saving the data history further comprises: saving the data history in a file. Levine teaches saving the data history further comprises: saving the data history in a file (column 3, lines 16-18).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Johnston to include saving the data history further comprises: saving the data history in a file using the teaching of Levine. The modification would be obvious because one of ordinary skill in the art would be motivated to store data for post processing.

Per Claim 24:

This is a computer-readable medium version of the claimed method discussed above, claim 8, wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also obvious.

Per Claims 42, 45, 51 & 53:

These are another versions of the claimed method discussed above (claims 5, 8, 14 & 16, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.
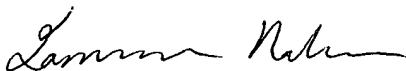
Conclusion

13.   Any inquiry concerning this communication from the examiner should be directed to

Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be

reached on Mondays through Fridays from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q. Dam, can be reached on (571) 272-3695. The fax phone number for the

organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QN
September 13, 2005

ANTONY NGUYEN-BA
PRIMARY EXAMINER